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Bing Qin · Zhi Jin · Haofen Wang · Jeff Pan ·
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Knowledge Graph and Semantic Computing

Knowledge Graph
Empowers New Infrastructure
Construction

6th China Conference, CCKS 2021
Guangzhou, China, November 4–7, 2021
Proceedings

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Preface

This volume contains the papers presented at CCKS 2021: the China Conference on Knowledge Graph and Semantic Computing held during November 4–7, 2021, in Guangzhou, China.

CCKS is organized by the Technical Committee on Language and Knowledge Computing of the Chinese Information Processing Society, and represents the merger of two previously-held relevant forums, i.e., the Chinese Knowledge Graph Symposium (CKGS) and the Chinese Semantic Web and Web Science Conference (CSWS). CKGS was previously held in Beijing (2013), Nanjing (2014), and Yichang (2015). CSWS was first held in Beijing in 2006 and has been the main forum for research on Semantic (Web) technologies in China for a decade. Since 2016, CCKS has brought together researchers from both forums and covered a wider range of fields, including knowledge graphs, the Semantic Web, linked data, natural language processing, knowledge representation, graph databases, information retrieval, and knowledge aware machine learning. It aims to become the top forum on knowledge graph and semantic technologies for Chinese researchers and practitioners from academia, industry, and government.

The theme of this year’s conference was “Knowledge Graph Empowers New Infrastructure Construction”. Enclosing this theme, the conference scheduled various activities, including keynotes, academic workshops, industrial forums, evaluation and competition, knowledge graph summit reviews, presentation of academic papers, etc. The conference invited Jiawei Han (Michael Aiken Chair and Professor at the Department of Computer Science, University of Illinois at Urbana-Champaign), Jie Tang (Full Professor and the Associate Chair of the Department of Computer Science and Technology, Tsinghua University), and Ming Zhou (Chief Scientist at Sinovation Ventures and former president of the Association for Computational Linguistics) to present the latest progress and development trends in mining structured knowledge, complex reasoning and graph neural networks, and self-supervised learning, respectively. The conference also invited industrial practitioners to share their experience and promote industry-university-research cooperation.

As for peer-reviewed papers, 170 submissions were received in the following six areas:

- Knowledge Graph Representation and Reasoning
- Knowledge Acquisition and Knowledge Graph Construction
- Linked Data, Knowledge Integration, and Knowledge Graph Storage Management
- Natural Language Understanding and Semantic Computing
- Knowledge Graph Applications (Semantic Search, Question Answering, Dialogue, Decision Support, and Recommendation)
- Knowledge Graph Open Resources

During the reviewing process, each submission was assigned to at least three Program Committee members. The committee decided to accept 56 papers (28 in English,

including 19 full papers and 9 short papers). This CCIS volume contains revised versions of the 28 English papers.

The hard work and close collaboration of a number of people have contributed to the success of this conference. We would like to thank the Organizing Committee and Program Committee members for their support, and the authors and participants who are the primary reason for the success of this conference. We also thank Springer for their trust and for publishing the proceedings of CCKS 2021.

Finally, we appreciate the sponsorships from EpiK Tech and Meituan as chief sponsors; Tencent Technology and Haizhi Xingtu Technology as diamond sponsors; Global Tone Communication Technology, Oppo, and PlantData as platinum sponsors; Xiaomi, Baidu, Yidu Cloud, Huawei, IFLYTEK, and Vesoft as gold sponsors; and Ant Group, Zhipu.ai, and Yunfu Technology as silver sponsors.

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